

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

**NEGOTIATED DATA SOLUTIONS,
INC.,**
Plaintiff,

V.

APPLE, INC., et al.,
Defendants.

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CAUSE NO. 2:11-CV-390-JRG

MEMORANDUM OPINION AND ORDER

Before the Court is the parties' claim construction briefing. This Order addresses the parties' various claim construction disputes. The Order will first briefly address the patents-in-suit and then turn to the merits of the claim construction issues.

I. BACKGROUND AND THE PATENTS-IN-SUIT

Plaintiff Negotiated Data Solutions, Inc. ("N-Data") brings action against defendants Apple Inc., Samsung Electronics Co., LTD, Samsung Electronics America, LLP, Samsung Telecommunications America, LLC, HTC Corporation, HTC America, Inc., Motorola Mobility, Inc., Nokia Corporation, Nokia Incorporated, Research In Motion Limited and Research In Motion Corporation (collectively, "Defendants"), alleging infringement of U.S. Pat. No. 5,361,261 (the "'261 Patent"); U.S. Pat. No. RE 38,820 (the "'820 Patent"); U.S. Pat. No. RE 39,216 (the "'216 Patent"); and U.S. Pat. No. RE 39,395 (the "'395 Patent") (collectively, the "patents-in-suit").

The '261 Patent has a priority date of Nov. 2, 1992. The '395 and '216 Patents are continuation-in-part applications of a parent application that also has a priority date of Nov. 2, 1992. Much of the written specifications and figures of the '261, '395 and '216 Patents are common between those patents. The '820 Patent dates to a separately filed Dec. 21, 1994

application. All of the patents incorporate by reference the parent application of the '395 and '216 Patents.

A prior Eastern District of Texas case involved all four patents-in-suit and a claim construction order was issued January 16, 2009. *Negotiated Data v. Dell, Inc.*, 2:06-cv-528-CE, Dkt.197 (referred to herein as the *Dell* Order). The parties currently dispute eleven groupings of claim terms. One of the claim disputes raises indefiniteness issues under 35 U.S.C. §112. Many of the claim terms in dispute were addressed in the *Dell* Order.

In general:

[t]he four patents-in-suit relate to different aspects of a data communications system with the capability of transmitting and receiving both isochronous data and non-isochronous, or Ethernet, data. Non-isochronous data is transferred from one network node to another network node via packets. A packet may be constant or variable in size. Each packet includes the data to be transferred and may also include other information, such as housekeeping and address information. Packets in a non-isochronous protocol are generally sent in a non-uniform manner, typically with random variable data rates. A drawback to the use of non-isochronous data is that collisions may often occur between packets during transmission, creating a time-delay. Non-isochronous data is, therefore, useful in applications which are not adversely affected by a delay in time, such as e-mail or web browsing.

In contrast, isochronous data is data which is often non-packetized and of indeterminate, potentially continuous duration. An isochronous data source is a device which outputs data in a continuous stream usually at a substantially constant average data rate. Isochronous data is useful in applications which are adversely affected by a delay in time, such as video conferencing or telephone calls. Because isochronous-source data is typically not packetized, it cannot be accommodated in a packet format without substantially interfering with its isochronous character, often introducing an undesirable amount of delay or jitter. See '261 Patent, Background of the Invention.

Previous to the present invention, isochronous data, such as telephone conversations and video teleconferencing, was sent over ISDN, an isochronous capable service, rather than over Ethernet. The patentees thus sought to combine the aspects of isochronous data with Ethernet.

Dell Order at 2-3.

II. LEGAL PRINCIPLES

A. Claim Construction Principles

“A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention.” *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996).

To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. The specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. *Id.* A patent’s claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* “One purpose for examining the specification is to determine if the patentee has limited the scope of the claims.” *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee’s invention. Otherwise, there would be no need for claims. *SRI Int’l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*,

34 F.3d 1048, 1054 (Fed. Cir. 1994).

This court's claim construction decision must be informed by the Federal Circuit's decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." 415 F.3d at 1312 (emphasis added) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention and that patents are addressed to and intended to be read by others skilled in the particular art. *Id.*

Despite the importance of claim terms, *Phillips* made clear that "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of "a fully integrated written instrument." *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314-17. As the Supreme Court stated long ago, "in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and

meaning of the language employed in the claims.” *Bates v. Coe*, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.

Phillips, 415 F.3d at 1316. Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. Like the specification, the prosecution history helps to demonstrate how the inventor and the Patent and Trademark Office (“PTO”) understood the patent. *Id.* at 1317. Because the file history, however, “represents an ongoing negotiation between the PTO and the applicant,” it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. *Id.*

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes. *Phillips*, 415 F.3d at 1319-24. The approach suggested by *Texas Digital*—the assignment of a

limited role to the specification—was rejected as inconsistent with decisions holding the specification to be the best guide to the meaning of a disputed term. *Id.* at 1320-21. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of “focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.” *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.* What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id.* The definitions found in dictionaries, however, often flow from the editors’ objective of assembling all of the possible definitions for a word. *Id.* at 1321-22.

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323-25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

B. Claim Indefiniteness

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. Whether a claim meets this definiteness requirement is a matter of law. *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1344 (Fed. Cir. 2007). A party challenging the definiteness of a claim must show it is invalid by clear and convincing evidence. *Id.* at 1345.

“Only claims ‘not amenable to construction’ or ‘insolubly ambiguous’ are indefinite.” *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1250 (Fed. Cir. 2008) (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005)). That is, the “standard [for finding indefiniteness] is met where an accused infringer shows by clear and convincing evidence that a skilled artisan could not discern the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area.” *Halliburton*, 514 F.3d at 1249-50. The ultimate issue is whether someone working in the relevant technical field could understand the bounds of a claim. *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 783 (Fed. Cir. 2010).

In determining whether that standard is met, i.e., whether the claims at issue are sufficiently precise to permit a potential competitor to determine whether or not he is infringing, we have not held that a claim is indefinite merely because it poses a difficult issue of claim construction. We engage in claim construction every day, and cases frequently present close questions of claim construction on which expert witnesses, trial courts, and even the judges of this court may disagree. Under a broad concept of indefiniteness, all but the clearest claim construction issues could be regarded as giving rise to invalidating indefiniteness in the claims at issue. But we have not adopted that approach to the law of indefiniteness. We have not insisted that claims be plain on their face in order to avoid condemnation for indefiniteness; rather, what we have asked is that the claims be amenable to construction, however difficult that task may be. If a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, we have held the claim indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds. . . . By finding claims indefinite only if reasonable efforts at claim construction prove futile, we accord respect to the statutory presumption of patent validity . . . and we protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.

Exxon Research & Eng'g Co. v. U.S., 265 F.3d 1371, 1375 (Fed. Cir. 2001) (citations and internal quotation marks omitted).

C. Construing Claim Terms that Have Previously Been Construed by This or Other Courts

As indicated above, this is not the first opportunity for this Court to construe the patents-in-suit. *See Dell Order*. Although the disputes in this case present many of the same issues that have already been resolved in the case mentioned above, the Court still carefully considered all of the parties' arguments (both the new and repetitive arguments) in construing the claims in this case. *See Burns, Morriss & Stewart Ltd. P'ship v. Masonite Int'l Corp.*, 401 F. Supp. 2d 692, 697 (E.D. Tex. 2005) (describing that although a previous construction may be instructive and provide the basis of the analysis, particularly when there are new parties and those parties have presented new arguments, the previous construction is not binding on the court). As indicated by *Burns*, however, the previous constructions in those cases, and particularly from those in this District, are instructive but are not alone compelling or binding on the Court. *See id.* They may at time, however, provide part of the basis for the present analysis.

IV. CONSTRUCTION OF DISPUTED TERMS

A. "frame"

Term or Phrase	N-Data's Construction	Defendants' Construction
"frame" '820 Patent, claims 30, 34 '216 Patent, claim 15 '261 Patent, claims 1, 2	format for data transmission	format for data transmission having a pre-determined number of time slots, wherein a synchronization pattern is used for establishing the beginning of the frame

The parties dispute whether the construction requires the inclusion of time slots and the requirement of a synchronization pattern.

1. The Parties' Positions

N-Data emphasizes that its construction matches the *Dell* construction. N-Data asserts that the claims define what needs to be included in a frame for each claimed intention. For support, N-Data cites to the claim language: '820 Patent claim 30 which states "wherein network information frames include non-isochronous and isochronous slots;" '216 Patent claim 15 which states "said frame structure defining at least a first dedicated bandwidth for data;" and '261 Patent claim 1 which states "each time frame having a plurality of slots." N-Data asserts that Defendants' construction improperly limits "frame" absent disclaimer within the specification which represents clear disavowal of claim scope. Dkt. 131 at 3.

Defendants respond that N-Data's construction would cover any data transmission. Defendants assert that the inventions of the patents-in-suit are directed toward combining multiple data streams carrying two types of data (isochronous and non-isochronous data) into one data stream. Defendants assert that the "linchpin" of this scheme is the frame into which the data is combined for transmission and from which it is extracted and separated. Defendants assert that in this context a frame necessarily requires (1) a pre-determined number of time slots and (2) a synchronization pattern to establish the beginning of the frame. Dkt. 135 at 5.

Defendants cite to '261 Patent 2:44-50 which states "[t]he present invention provides for transmitting packet-source data in a frame structure by re-timing the data, such as using a buffer to position bit groups of the data in predetermined time slots of recurring time frames or templates." Defendants assert that throughout the specification frames must consist of predetermined time slots, quoting: "[t]he frame structure is a continuously repeating structure, with each frame having a number of time slots" ('261 Patent, Abstract) and "techniques are employed to divide a communication medium into a number of consecutive frames, each frame

including a number of time slots” (‘820 Patent 1:52-58). Defendants also cite to the prosecution history: “[e]ach time frame is made-up of a plurality of time slots. The bit-groups are transmitted, one in each of a predetermined number of the time slots in a time frame.” Dkt. 135 at 6, Ex. E (quoting 10/21/93 Amendment at 15). Defendants also assert that the patents explain that the predetermined number of time slots is needed to separate the two types of data:

Since only predetermined positions of the time slots in each time frame are used for each of the various types of data, it is possible to separate the packet-sourced data from the isochronous-sourced data even though the form of the two types of data, as they travel across the physical medium, appears identical.

‘261 Patent 4:4-9. Defendants assert that these concepts must be included in the construction “to tether the claims to what the specification indicates the inventor actually invented.” Dkt. 135 at 7 (quoting *Retractable Tech., Inc. v. Becton*, 653 F.3d 1296, 1305 (Fed. Cir. 2011)). Defendants cite to the ‘216 Patent claim 15 as an example of a claim that does not include “slots” elsewhere in the explicit claim language.

Defendants assert that the inclusion of a “synchronization pattern” in their construction flows directly from the use of predetermined time slots because such slots are useless unless the beginning of the frame can be established. Defendants point to ‘261 Patent FIG. 11 and Table I in which a “JK” pattern is used as a frame synchronization pattern to detect the beginning of a frame “according to an embodiment of the present invention.” Dkt. 135 at 7 (quoting ‘261 Patent 5:38-42). Defendants point to the ‘820 Patent 4:3-5 which states that “the information being transmitted is broken up into a plurality of frames of information by a plurality of synchronization pulses.” Defendants also cite to a patent (United States Patent No. 5,544,324) that is incorporated by reference into the patents-in-suit. Defendants assert that the ‘324 Patent

explains that a synchronization pattern, such as JK, indicates the beginning of a frame. Dkt. No 135 at 7-8 (citing ‘324 Patent at Abstract, 6:52-55, 5:57-63).

In reply, N-Data asserts that the specification made clear that different types of frames may be included as noted in the language at ‘261 Patent 9:63-10:1: “[o]ther types of frame structures could be used in connection with isochronous and/or non-isochronous data sources” and “in which case a different frame structure or template can be used.” N-Data asserts that Defendants’ “synchronization pattern” limitation is an attempt to read one embodiment into the claim. N-Data also points out that the reference made to Figure 11 and Table I is just an example as the specification describes such passages as “according to an embodiment of the present invention.” ‘261 Patent at 5:41-42. N-Data also notes that the ‘324 Patent (incorporated by reference) teaches other methods may be used to time frame transmissions. N-Data asserts that the ‘324 Patent teaches “[a] clock signal is used for timing the frame transmissions, i.e., for establishing points...at which the transmission of each frame begins.” Dkt. 139 at 2 (quoting ‘324 Patent at 5:63-66). N-Data asserts that this is explicitly included in ‘261 Patent claim 1 which states “a reference clock...for establishing the beginning time of a plurality of contiguous time frames.” Dkt. 139 at 2 (quoting ‘261 Patent at 16:58-60).

2. Analysis

Defendants seek to incorporate limitations from the disclosed embodiments without identifying language of clear disavowal within the intrinsic record. However, the specifications treat the limitations Defendants seek as “an embodiment.” Further, the specification passages cited by Defendants describe specific aspects of “frames,” implying that the term “frame” in fact has a more general meaning. *See Phillips*, 415 F.3d at 1314 (the use of “steel baffles” implies “baffles” are not inherently made of steel). The ‘261 Patent specification makes clear that

“[o]ther types of frame structures could be used in connection with isochronous and/or non-isochronous data sources” and “in which case a different frame structure or template can be used.” ‘261 Patent at 9:63-10:1. Defendants also assert that the recitation of “frame” in the claims requires the inclusion of the “linchpin” of the invention within that term. However as pointed out by N-Data, the claims themselves include limitations describing the particular aspects of the frames and the usage of slots. With regard to the ‘216 Patent Claim 15, though not using the term “slots,” the concept of time-division multiplexing data into the frame structure is explicitly recited, thus again describing the particular aspect of the frame as claimed. It is the surrounding claim language that describes the particular claimed inventions with regard to the concepts that Defendants seek to incorporate. Similarly, the descriptions in the ‘324 Patent and ‘261 Patent claim 1 regarding using a reference clock for establishing the beginning of time frames also counsels against including the limitations sought by Defendants.

Though Defendants somewhat raise different construction issues than were presented in *Dell*, Defendants arguments fail as described above and the *Dell* construction is found to be the proper construction in this case. **The Court construes “frame” to mean “format for data transmission.”**

B. Multiplexer Related Terms

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“multiplexer” ‘820 Patent, claims 47, 58, 87	Plain and ordinary meaning: if the Court determines that construction is necessary: circuitry for processing data into a repeating series of frames or templates	circuitry for combining data from various sources into each frame of a repeating series of frames
“multiplexing” ‘216 Patent, claims 15, 97	Plain and ordinary meaning: if the Court determines that construction is necessary:	combining data from various sources into each frame of a repeating series of frames

	processing data into a repeating series of frames or templates	
“time-division multiplexing” ‘216 Patent, claims 15, 97	processing (data) into a repeating series of frames or templates according to time intervals	combining data from various sources into each frame of a repeating series of frames according to predetermined time slots

The issues presented center upon whether a multiplexer can only have one input source or whether “various sources” are required. In addition, the parties dispute whether each frame must include data from each source.

1. The Parties’ Positions

N-Data asserts that Figure 2 of the ‘216 Patent illustrates MUX/DEMUX circuits 50a and 50b which have only one input. N-Data quotes the *Dell* Order which stated:

Figure 2 of the ‘216 patent discloses two situations in which there is one input. In Node 1, the multiplexer has only one input and one output. ... Node 3 presents the same situation. Although N-Data’s proposed definition may contradict the standard definition of multiplexer, the court must define the disputed term in light of the specification and claim language. Here the court finds that the patentee disclosed multiplexers having only one input.

Dell Order at 30. N-Data asserts that as shown in the figure, the patentee clearly intended that a multiplexer could have only one input. Dkt. 139 at 3. N-Data asserts that as used in the claims the term “multiplexer” refers to the time placement of data in frames not the selection of inputs. Dkt. 131 at 7.

N-Data also asserts that requiring data from each source to always be placed in each frame is inconsistent with the specification. N-Data cites to the example of “bit-stuffing” when during times in which no non-isochronous data is being received, other data will be placed in non-isochronous time slots. Dkt. 131 at 7 (citing ‘261 Patent at 7:35-38). N-Data also cites to the ‘820 Patent which describes situations where the “bursty” traffic may carry no “bursty”

information, such as after the burst. Dkt. 131 at 7 (citing ‘820 Patent at 4:7-11). N-Data also asserts that some of the claims themselves define the use of only one source. In particular, N-Data cites to the ‘216 Patent claim 97 which recites “time-division multiplexing data from the isochronous data source and/or the non-isochronous data source.” N-Data asserts that Defendants’ construction must be incorrect for excluding such situations.

Defendants respond that N-Data’s construction reads the prefix “multi” out of the term. Defendants assert that the specification is consistent with the well-established meaning of “multiplexer” that refers to combining inputs from two or more sources. Dkt. 135 at 10 (citing ‘216 Patent 6:7-10, 6:51-54; ‘395 Patent 3:53-56, 7:51-54; ‘261 Patent 4:46-49, 10:31-36). Defendants assert that ‘216 Patent Figure 2 does not contradict the ordinary meaning of multiplexer. Defendants assert that the multiplexers 50a and 50c are still circuitry for combining data from various sources, but in the cases shown, only one source is currently being used. Dkt. 135 at 10-11. At the oral hearing, Defendants emphasized that Figure 2 is merely a high level diagram that did not show all of the required connections. Defendants asserted that the specification was not clear enough to provide an unambiguous re-definition of the term.

As to requiring “each frame” to have data from each source, Defendants assert that the specification uses “present invention” language to state that “[t]he present invention receives packetized data and transmits it over a physical medium in a frame format. The frame format permits both packet-sourced data and non-packet sources data to be transmitted during each time frame.” Dkt. 135 at 12 (quoting ‘261 Patent 15:65-16:2). Defendants assert that allocating some time slots of each frame to each data type achieves the patent’s goal of providing “dedicated bandwidth” to each data type. Dkt. 135 at 12 (citing ‘395 Patent at 2:51-56; ‘216 Patent at 4:26-30; ‘261 Patent at 2:60-64). Defendants assert that the concept of “bit-stuffing” (inserting null

bits into time slots when a second source is not active) confirms that Defendants' constructions are correct. Defendants assert that the requirement of bit-stuffing confirms the use of predetermined slots because if slots were not predetermined, no bit-stuffing would be needed. Dkt. 135 at 12. Defendants assert that bit-stuffing is effectively an additional source. At the oral hearing, Defendants shifted course and asserted that data from both sources was only needed to the extent data exists.

As to "time-division multiplexing," Defendants assert placing data in "predetermined time slots" is part of the claimed invention as described with regard to "frame." Defendants point to language in the specification in which describes placing the data in "predetermined time slots" in the context of multiplexing. Dkt. 135 at 11 (citing '261 Patent 8:57-10:16). Defendants also cite to language which it asserts characterizes why predetermined time slots are necessary: "since only predetermined positions of the time slots in each time frame are used for each of the various types of data, it is possible to separate" isochronous data from non-isochronous data. Dkt. 135 at 11 (citing '261 Patent 4:4-9).

In reply, N-Data asserts that Defendants are misdirecting the Court to arguments concerning the patentee teaching that each frame will have different types of data (e.g. isochronous and non-isochronous) and then bootstrapping these statements to a requirement that each frame has data from every source. N-Data asserts that according to Defendants construction if five sources were present, every frame would need data from every source. N-Data asserts there is no such requirement in the intrinsic record. N-Data also notes that the specification cites provided by Defendants relate to time slots being used for each "type" of data. N-Data asserts that the claims assert what types of data are to be included but are silent as to "sources."

2. Analysis

“multiplexer”

The *Dell* Order noted that in an ordinary meaning “multiplexers” may relate to more than one input and N-Data does not appear to dispute that some standard dictionary definitions would point to such construction. The ‘216 Patent disclosure, in contrast, unambiguously illustrates situations where only one data source may be utilized as an input. As shown in ‘216 Patent Figure 2, examples are given with regard to NODE 1 and NODE 3 in which a single input source (48a for NODE 1 and 48g for NODE 3) is provided to the receiving and converter circuitry 50a or 50c respectively, each circuit block having a multiplexer 70 as shown in Figure 4. ‘216 Patent Figure 2, 8:38-40, 9:18-19, 10:31-34. Clearly, the patents-in-suit anticipate the applicability of the inventions in the context of the use of only one input data source. Moreover, both parties agree that the patents describe the function of the placing null bits in time slots that are unused, again suggesting the applicability of the inventions even in the presence of only one data source. Thus, the requirement of two sources of data is inappropriate. The ‘216 Patent describes the function of the multiplexer as “multiplexer 70 which performs time division multiplexing.” 10:33-34. The intrinsic record as a whole, including the citations pointed to by Defendants, emphasize the conversion of the data into time intervals. In this context, the Figures and associated written descriptions, make clear that the use of a multiplexer is not limited to the existence of multiple sources but rather emphasizes the time allocation of input data. Thus, the Court rejects the limitations sought by Defendants.

However, N-Data’s construction requires modification in two respects. At the hearing, N-Data agreed that the inclusion of “from one or more inputs,” as included in the *Dell* Order, provides better understanding and clarity for the jury. Further, N-Data’s construction lacks (at

least explicitly) the primary concept of the use of the term “multiplexer” in the context of the patents-in-suit. As stated by N-Data, “[a]s used in the claims, the term ‘multiplexer’ is referring to the time placement of data in frames, not the selection of inputs.” Dkt. 131 at 7. The Court agrees and thus includes “according to time intervals” within the definition of “multiplexer.” **The Court construes “multiplexer” as “circuitry for processing data from one or more inputs into a repeating series of frames or templates according to time intervals.”**

“multiplexing” and “time-division multiplexing”

In the asserted claims, “multiplexing” is only utilized in the context of the longer phrase “time-division multiplexing.” A separate construction of “multiplexing” is thus not necessary and in fact may create confusion for the jury. The Court shall only construe “time-division multiplexing.”

With regard to “time division multiplexing,” the single input source arguments are also applicable to this term. In addition, it is noted that the claims in question have other language that addresses the one or more than one source issue. ‘216 Patent claim 97 only requires multiplexing data from an isochronous data source “and/or” a non-isochronous data source. The specification indicates that the pattern for time division multiplexing involves a “repeating series of frames or templates.” ‘216 Patent at 10:31-36. Defendants seek to read a preferred embodiment “predetermined” into the claims without adequate citation to disavowal within the specification. Moreover, the other language of the claims provides the allocation of the multiplexing time intervals: ‘216 Patent claim 15 states “according to a periodically repeating frame structure” and ‘216 Patent claim 97 states “wherein a first bandwidth is allocated for data from the isochronous source, wherein the data transfer rate for the isochronous data is substantially independent of the non-isochronous demand on the data system.” **The Court**

construes “time-division multiplexing” to mean “processing data into a repeating series of frames or templates according to time intervals.”

C. “isochronous data”

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“isochronous data” ‘395 Patent, claims 16, 17, 41 ‘216 Patent, claims 24, 26, 97 ‘261 Patent, claim 2	data of indeterminate, potentially continuous duration	Apple, Samsung, HTC, Motorola, and Nokia: continuous stream of data of indeterminate duration and substantially constant average data rate, whose transmission is not synchronized with the arrival of a token RIM: data stream of indeterminate, substantially continuous duration, whose transmission is not synchronized with the arrival of a token

There are three disputes raised with regard to the term: (1) whether the data must be a continuous stream of data, (2) whether an average data rate should be included in the construction, and (3) whether the term requires the absence of a token for synchronization.

1. The Parties’ Positions

N-Data asserts that it has adopted the *Dell* construction. N-Data asserts that a passage from the ‘395 Patent is instructive:

In general terms, isochronous data is data which is non-packetized and of indeterminate, potentially continuous duration . . . An isochronous data source is a device which outputs data in a continuous stream, usually at a substantially

constant average data rate. Examples include video cameras, which output a substantially continuous stream of data representing images and associated sounds, and telephone output, which can be substantially continuous output of voice data (either analog or digitized).

‘395 Patent at 1:23-34. N-Data objects to the inclusion of “substantially constant average data rate” as being contrary to the above cited passage that states isochronous data is only “usually at substantially constant average data rate.” N-Data objects to the “token” limitation as being based upon a portion of the specification that describes isochronous data transfer systems, not isochronous data itself. N-Data asserts that the ‘261 Patent specification makes clear the distinction between isochronous sources and isochronous data:

the relationship between packetized data and isochronous data is best discussed after distinguishing between isochronous-source data and isochronous transfer. In general terms, isochronous data is data which is non-packetized and of indeterminate, potentially continuous duration. An isochronous data source is a device which outputs data in a continuous stream, usually at a substantially constant average data rate.

‘261 Patent at 1:20-28. N-Data asserts that the specification continues: “[r]elated to isochronous sources and sinks is the concept of data transfer which can be either isochronous or non-isochronous.” ‘261 Patent at 1:35-37. N-Data asserts that the patent thus differentiates between data source and data transfer, and that the patent teaches that isochronous data may be transmitted using a non-isochronous data transfer system and vice-versa. N-Data asserts that Defendants’ construction collapses the distinctions between the two. N-Data also objects to Defendants’ constructions for not making clear what transmission must be synchronized with the token: the data first transmitted from an isochronous data source or the data as transmitted by a data transfer system. Dkt. 131 at 5, n. 5.

N-Data asserts that the statements relied upon by Defendants with regard to tokens define the descriptions of the data transfer systems, not the data being transmitted by that system. N-

Data asserts that Defendants confuse the distinctions between “data” on one hand and “data sources” and “data transfer systems.” N-Data asserts that is why the *Dell* order had differing constructions for “isochronous data source” and “isochronous data.” Dkt. 139 at 4-5. N-Data asserts that the inclusion of “tokens” references how the data systems transfer data downstream, not the characteristics of the data itself.

In response Defendants assert that the *Dell* Order makes clear that isochronous relates to a continuous stream. First, Defendants point to ‘395 Patent Figure 1A and 1C as illustrating the contrasting nature of non-isochronous data in Figure 1A (packetized) and isochronous data in Figure 1C, a continuous stream of data. Defendants assert this conforms to the other portions of the specifications. Dkt. 135 at 15. Defendants then note that in *Dell* N-Data sought a construction that included “data in a continuous stream, usually at substantially constant average data rate.” Dkt. 135 at 16 (quoting *Dell* Order at 22). Defendants also note that though “continuous” was not expressly adopted in the *Dell* definition of “isochronous data,” “continuous” was included in the *Dell* construction of “isochronous source” (construed as “a device which outputs in a continuous stream”), “isochronous data source” (construed as “device which outputs data of indeterminate, potentially continuous duration in a continuous stream, usually at a substantially constant average data rate”), and “isochronous” (construed as “continuous, with a uniform time period”). Dkt. 135 at 16; *Dell* Order at 24-25.

Defendants also object that N-Data’s construction does nothing to define the term because the inclusion of “potentially” means the data may or may not be continuous, thus potentially being non-isochronous data. Dkt. 135 at 16. Defendants also cite to the passage relied upon by N-Data, noting that the passage states “data in a continuous stream,” “output a substantially continuous stream,” “substantially continuous output,” and “substantially

continuous stream.” Dkt. 135 at 16 (quoting ‘395 1:22-35 and the similar passages in the ‘216 and ‘261 Patents).

Defendants conclude on the “continuous” issue by asserting that the *Dell* Order recognized that “continuous” was a feature of “isochronous” and that incorporating “potentially” in the “isochronous data” construction contradicts the other findings in *Dell*. Dkt. 135 at 17, n. 11.

As for “substantially constant average duration,” Defendants assert that every party (N-Data included) sought the inclusion of such language in the *Dell* case. Defendants assert that with no analysis or discussion this language was not included in the *Dell* Order construction. Defendants also note that N-Data included this limitation in the *Dell* case in “isochronous source” and “isochronous data source.” Defendants assert that N-Data is now directly contradicting N-Data’s representation made in *Dell* by asserting the limitation is unwarranted. Dkt. 135 at 18. Defendants assert that there is no support in the intrinsic record or understanding of one skilled in the art for N-Data’s position.

As for the token issue, Defendants cite to the specification: “As seen in FIG. 1B, because data transmission is synchronized with the occurrence of an event (the arrival of a token), the token ring system is not an isochronous data transfer system.” Dkt. 135 at 19 (quoting ‘261 Patent 2:1-2:5 and corresponding passages in other patents). Defendants assert that numerous other passages state that a token based network is excluded from both “isochronous data sources” and “isochronous data.” Dkt. 135 at 19, n. 14. Defendants cite to *SciMed* as teaching that when a specification makes clear that an alleged invention does not include a feature, that feature is deemed outside the scope of the claims. Dkt. 135 at 19. Defendants assert that N-Data’s own

construction contradicts the separateness of data and data transfer as N-Data's construction refers to "continuous duration." Defendants assert that data per se cannot have a continuous duration; it is the transfer of data that has a continuous duration.

2. Analysis

In the context of the patent, isochronous data is data provided from an isochronous source. As explained in the *Dell* order with extensive citation to the specification, the systems disclosed in the patents-in-suit may downstream purposefully change the format of the isochronous data (for example placing it in packets), but as used in the specification such data still remains the isochronous data. *Dell* Order at 23-24. Thus, the *Dell* construction did not mandate that isochronous data must be packetized.

The specification passages cited above provide guidance as to the isochronous data as it originates from an isochronous source:

The relationship between packetized data and isochronous data is best discussed after distinguishing between isochronous-source data and isochronous data transfer. In general terms, isochronous data is data which is non-packetized and of indeterminate, potentially continuous duration. An isochronous data source is a device which outputs data in a continuous stream, usually at a substantially constant average data rate. Examples include video cameras, which output a substantially continuous stream of data representing images and associated sounds, and telephone output, which can be substantially continuous output of voice data (either analog or digitized).

'261 Patent at 1:20-32. Using the specification language as a guide, at the oral hearing the Court proposed the following construction to the parties¹: "data that when originated is (1) of indeterminate, potentially continuous duration; (2) in a substantially² continuous stream; and (3) usually at a substantially constant average data rate." At the oral hearing, N-Data agreed to such

¹ The Court did not number each sub-element of the construction but does here for clarity.

² The Court did not include "substantially" but includes this word to explicitly match the examples in the specification quote at '261 Patent 1:28-32.

construction and the Defendants also agreed except the Defendants asserted that the construction should further include the negative limitation regarding not synchronized with a token.

As described in the specification a token ring system primarily relates to the data transfer system, the downstream transmission of the data. ‘261 Patent 2:1-5. Defendants quote this passage to assert that a system which utilized “the arrival of a token” is “not an isochronous data transfer system.” With regard to this passage and others cited by Defendants, the Defendants do not point to descriptions of isochronous data itself but rather characteristics of non-isochronous data transfer systems. Defendants seek to define isochronous data based upon limitations of a non-isochronous system. However, as noted in the *Dell* Order at 23-24, in the context of the explicit descriptions of the patents-in-suit, isochronous data may be changed downstream such as by being transferred in packet based systems. Further, as described in the ‘261 Patent at 1:20-37, the concepts of isochronous source, isochronous data and isochronous transfer are distinct. Viewing the intrinsic record as a whole, isochronous data is not limited by the patents’ descriptions of the prior art non-isochronous transfer systems. **The Court construes “isochronous data” to mean “data that when originated is (1) of indeterminate, potentially continuous duration; (2) in a substantially continuous stream; and (3) usually at a substantially constant average data rate.”**

D. “asynchronously”

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“asynchronously” ‘216 Patent claims 15, 19, 97	running in accordance with two different clocks, e.g., a 33 MHz clock and a 12.5 MHz clock	operating with unrelated timing

The dispute between the parties revolves around whether the timing of two clocks has to be unrelated. In a sense, the real dispute between the parties appears to be a dispute over what is meant by “different” as stated in the *Dell* Order.

1. The Parties’ Positions

N-Data asserts that its construction is the same as in *Dell* (citing *Dell* Order at 43-44). N-Data cites to the ‘216 Patent specification which states at 15:59-63 “[t]he switch table and the processor are asynchronous in the sense that they run in accordance with two different clocks. In one embodiment, the processor runs at a 33 MHz clock while the switch table runs at a 12.5 MHz clock.” N-Data objects to Defendants’ “unrelated” and asserts that the patent contemplates some degree of relatedness through the use of synchronizer clocks and circuitry with respect to certain registers. Dkt. 131 at 8 (citing ‘216 Patent 15:59-16:14, Figure 12 elements 1002, 1204, 1222, 1224, Figure 14 elements 1404 and 1406).

In response, Defendants assert that N-Data’s construction does not go far enough because the prosecution history and the understanding of one skilled in the art recognizes that the clocks need not only be different, they must also not be synchronized. Dkt. 135 at 23. Defendants cite the ‘216 Patent prosecution statement made by the applicants:

Applicant is not attaching any particularly unusual meaning to the term “asynchronously.” It simply means that the register means receives data in accordance with a timing scheme which is not tied to the timing scheme of the updatable table, i.e., they are not synchronized. Thus it is asynchronous with that operation.

In fact, when one uses the term “asynchronously,” it usually begs that question “asynchronously with what (or with the operation of what other device)?” Thus, in answer to the Examiner’s question as to how data can be received asynchronously with an operation, it can be received asynchronously with that operation if it is received at a rate not synchronized to the operation of the other device (in this case, the other device being the updatable table).

Dkt. 135 at 23, Ex. H (quoting ‘216 FH 2/23/95 Amendment at 9). Defendants further cite to a subsequent amendment in which the applicants stated:

[t]he term “asynchronously” simply means that two events occur irrespective of the timing of each other. This situation may exist where (1) two operations are occurring based on unsynchronized clocks, (2) a first operation is occurring based on a clock and a second operation is occurring without a clock, or (3) two events are occurring without clocks regardless of the timing of each other.

Dkt. 135 at 24, Ex. H (quoting ‘216 FH, 10/23/95 Amendment at 6).³ Defendants also cite to extrinsic evidence technical dictionaries to assert that its construction comports with the ordinary meaning. Dkt. 135 at 24. At the oral hearing, Defendants acknowledged that under its interpretation of “unrelated,” clocks that have different clock rates would not be “unrelated” if the clocks were generated from a common clock via a clock divider circuit.

In reply N-Data asserts that the prosecution history statements say nothing about “unrelated timing.” N-Data asserts that the first passage cited merely states “not tied” and “not synchronized.” N-Data asserts that something that is “not tied to” or “not synchronized” does not necessarily mean they are unrelated and that “unrelated timing” is vague and imprecise. N-Data again cites to ‘216 Patent 15:59-16:14 asserting that the specification makes clear that there may be a timing relationship between various devices in the system. Dkt. 139 at 6-7.

2. Analysis

As noted in *Dell*, the specification clearly states that asynchronous clocks are clocks that are “different.” The specification then gives an example of “different” clocks: 33 MHz and 12.5 MHz. It is noted that this example is an example of clocks that are not synchronized. At the instant claim construction hearing it became apparent that the Defendants ascribe a meaning to “unrelated” such that even clocks of different rates (for example 33 MHz and 12.5 MHz) may

³ Though Defendants’ quote left out the second sentence, the Court includes the second sentence as it is more relevant to the dispute at issue.

still be related. Reading the full context of the prosecution history amendments cited by Defendants, Defendants argument is not consistent with the prosecution history. First, the amendments did not utilize the term “unrelated” and certainly did not utilize any term in the manner of the breadth Defendants give to “related” clocks. Further, in full context, the amendments focus on “not synchronized” (or “unsynchronized”). Even the three amendment passages cited by Defendants provide such an emphasis. Defendants’ inclusion of “unrelated” and the expanded scope Defendants give to such term is not supported by the full context of the prosecution history.

At the hearing, it also became apparent that there is some ambiguity as to whether N-Data may be construing “different” in a manner that would include a construction that encompasses two synchronized clocks operating at the same rate. In the context of the patent specification and in the context of the prosecution history amendments, such a construction would be improper. The relevant specification passage, “e.g., a 33 Mhz clock and a 12.5 Mhz clock,” implies such and the prosecution history further makes clear that asynchronous is “a rate not synchronized.” N-Data’s construction fails to take in consideration the clear statements made in the prosecution history regarding asynchronous.

In the context of the specification and prosecution history, “different” relates to the clock rates. The Court is persuaded that a modified version of the construction applied in *Dell* is proper. **The Court construes “asynchronous” to mean “running in accordance with different clocks operating at different rates, e.g., a 33 MHz clock and a 12.5 MHz clock.”**

E. “outputting control data”

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“outputting control data” ‘216 Patent, claim 19	Plain and ordinary meaning	outputting data that defines the transmit and receive time slots

1. The Parties’ Positions

N-Data asserts the surrounding claim language of claim 19 is clear: “the updatable table outputting control data for controlling data transfers in the system.” N-Data asserts that nothing links the data to defining “the transmit and receive time slots” as urged by Defendants. Dkt. 131 at 9.

Defendants assert that in the specification control data can only control data transfers by defining transmit and receive slots. Defendants assert that the specification states “[i]t is necessary to control the timing of the output...such that a given one of the bytes stored in 132a is transmitted ...at the proper slot [of the frame].” Dkt. 135 at 24-25 (quoting ‘216 Patent at 13:13-16). Defendants also quote two Examiner’s Office Actions and a corresponding applicants’ Amendment which state “the operation of the updatable table includes defining transmit and receive time slots to control the multiplexers 146 and 156.” Dkt. 135 at 25, Ex H (quoting ‘216 Patent 5/1/95 Office Action at 2; 6/29/95 Amendment at 3; 7/24/95 Office Action at 2).

N-Data objects to Defendants’ use of the prosecution history statements and asserts that the Federal Circuit has made clear that statements made by the Examiner do not create estoppel. Dkt. 139 at 7 (citing *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111,1124 (Fed. Cir. 2004). N-Data states that though Defendants characterized “applicant” as making the prosecution history statement, in fact the Examiner was making the statements and the applicant merely summarized the Examiner’s argument. N-Data states that the recitation of

the quoted language in the applicants' Amendment was merely the applicants quoting the Examiner for the purposes of disagreeing with the Examiner's positions. Dkt. 139 at 7-8.

1. Analysis

Defendants seek to read into the claims an embodiment from the specification as to how to control data transfers. Defendants have not identified a clear disavowal from within the specification. Further, to argue that prosecution statements are a clear disavowal by the applicants is unreasonable when the statements originated with the Examiner and not the applicant. Upon reading the full context of the prosecution history, it is clear that the applicants did not adopt the Examiner's statements. The claim language in question is clear and needs no further construction. **The Court finds that "outputting control data" needs no construction.**

F. Memory Terms

Term or Phrase	N-Data's Construction	Defendants' Construction
"receive memory" '395 Patent, claims 14, 100	a shared (i.e. single) memory that receives data	Plain and ordinary meaning
"transmit memory" '395 Patent, claims 14, 100	a shared (i.e. single) memory that transmits data	Plain and ordinary meaning

1. The Parties' Positions

N-Data asserts that its constructions match the *Dell* order. Dkt. 131 at 9 (citing *Dell* Order at 46, 48). N-Data notes that the surrounding claim language in question is, for example from claim 14, "a plurality of receive datapaths for providing at least some data received over said media to said receive memory device" and "a plurality of transmit datapaths for providing at least some data from said transmit memory device to said communications medium." N-Data asserts that the claim language itself thus shows that the transmit memory is shared between a

plurality of transmit paths (and similarly the receive memory is shared between a plurality of receive datapaths). Dkt. 131 at 9-10. N-Data also asserts that the Hamada reference was distinguished during prosecution on this very ground: “[i]n the present invention ... the purpose of the receive datapath is to combine the multiple data lines in order to fill a single buffer.” Dkt. 131 at 10, Ex. 7 (quoting ‘395 June 19, 1995 Response at 10).

Defendants assert that N-Data’s construction fails because the specification shows that the receive and transmit buffers are formed of separate buffers. In particular, Defendants cite to Figure 7 and the corresponding specification in which the receive memory comprises “two buffers 132a, 132b” and the transmit memory comprises “two buffers 154a, 154b.” Dkt. 135 at 26 (quoting ‘395 Patent 10:45-46, 11:30-31). Defendants also assert that the specification shows that the “receive memory” and the “transmit memory” are completely separate and distinct elements. Defendants assert that requiring those elements (the receive element and the transmit element) to be combined in a single shared memory excludes the embodiment described in the specification with regards to Figures 7 and 12. Dkt. 135 at 26.

N-Data asserts that the *Dell* Order explicitly based its construction on the claim language and the prosecution history statements. N-Data further asserts that Defendants’ Figure 7 argument is inaccurate as Figure 7 clearly shows a single receive buffer divided into halves 132a/b and a single transmit buffer divided into halves 154a/b.

2. Analysis

The claim language itself and the prosecution history is persuasive. As claimed, the receive datapaths (plural) are provided to the receive memory (similarly on the transmit side). In the context of the figures and associated description such a limitation would relate to the receive buffer 132 as a whole such as utilized at 10:54-55, 11:5-7, and Figures 7 and 12. Contrary to

Defendants objections, the specification does not contradict such an interpretation as the buffer halves (for example 132a and 132b) of Figure 7 are shown as connected and receiving a common input. Further, it is noted that Figure 12 provides RX Buffer 132 and TX Buffer 134. Based upon the intrinsic record as a whole, N-Data's positions are persuasive. As such the Court adopts the position of N-Data and the rationale of the *Dell* Order.⁴ **The Court finds that "receive memory" means "a shared (i.e. single) memory that receives data" and that "transmit memory" means "a shared (i.e. single) memory that transmits data."**

G. Receive / Transmit Datapaths Terms

Term or Phrase	N-Data's Construction	Defendants' Construction
"plurality of receive datapaths"	plurality of paths of received/transmitted data	plurality of parallel paths of received/transmitted data
"plurality of transmit datapaths"		
'395 Patent, claim 14		

The parties dispute whether the datapaths must be "parallel."

⁴ Defendants provide three sentences in their brief in which Defendants appear to argue that N-Data's construction requires the "receive memory" and the "transmit memory" to both be shared together as a common memory. Dkt. 135 at 26. N-Data's construction does not make such requirement as for "received memory" the shared memory is a memory that "receives data" (similarly with respect to "transmit" memory and data). N-Data's construction thus encompasses for "received memory" the receive memory 132 and for "transmit memory" the transmit memory 154, even though those memories are shown to have halves 132a and 132b and halves 154a and 154b respectively. Defendants sought a "plain and ordinary meaning" construction for the terms in question and declined oral argument on these terms. If Defendants' intent in arguing that no construction is necessary to "lay behind the log" until expert reports are complete such tactics would circumvent the very purpose of patent rules in this and other districts. If Defendants intend to offer (in their expert report) what are in reality claim construction arguments, such as whether two elements in the claim have to be wholly separate from each other, Defendants should have proposed constructions defining such arguments and should have presented them in open Court with an opportunity for Plaintiff to respond to the same. The local Patent Rules provide ample opportunity to present proposed claim constructions, brief such constructions and further argue such constructions at a hearing before the Court. To the extent that Defendants intend to later argue that the proper construction of the elements requires a particular amount and degree of separateness between the transmit memory and the receive memory, Defendants had ample opportunity to present and argue such a proposed construction on this point. They declined to do so by seeking no construction as part of the claim construction hearing. This Court considers that they have waived any right to take a different position in the future.

1. The Parties' Positions

N-Data asserts that its construction matches the construction of the *Dell* Order for “receive datapath” and “transmit datapath” with the addition of “plurality.” Dkt. 131 at 10-11 (citing *Dell* Order at 46-47). N-Data asserts the claim itself provides details as to the datapaths such as the receive path “for providing at least some data received over said media to said receive memory device” and the transmit path for “providing at least some data from said transmit memory device to said communication medium.” N-Data notes that later in the claim receive datapaths include “a deserializer configured to receive serial data and output at least a portion of said received serial data in parallel” and the transmit datapaths include “a serializer configured to receive parallel data and output serial data.” N-Data asserts that to the extent Defendants’ construction means something different than the explicit language of the claims, such construction should be rejected; and to the extent Defendants’ construction merely restates what is in the claim, it is redundant. Dkt. 131 at 11.

Defendants respond by asserting that the applicants clearly stated the parallel concept in prosecution:

[T]he series of latches in the RX [receive] datapaths in the present invention are to handle data contentions between the various parallel receive datapaths. . . .

Nevertheless, Applicant has amended claim 14 to even more clearly distinguish over Sakurai. Particularly, claim 14 did not previously recite that there is a plurality of parallel receive and transmit datapaths. Applicant has now amended claim 14 to expressly recite this limitation

Dkt. 135 at 27, Ex. K (‘395 Patent 2/2/96 Amendment at 4-6 (emphasis in original)).

In Reply, N-Data asserts that Defendants ignore the emphasis in the original document: “Particularly, claim 14 did not previously recite that there is a plurality of parallel receive and transmit datapaths.” N-Data asserts that the amendment is clearly directed toward the “plurality” of datapaths, that the explicit word added to the claims in the Amendment was “plurality” and

that the reference to parallel refers to the concept already in the claim regarding the deserializer that outputs at least a portion of the received serial data in parallel (and a similar parallel limitation for the serializer of the transmit path). Dkt. 139 at 9. N-Data thus asserts that “parallel” was a description of the data on the paths not a description of the paths themselves.

2. Analysis

The prosecution statement cited by Defendants must be read in light of the then existing claims and the amendment being made. Here the amendment to the claim fundamentally only added “plurality”: “a plurality of receive [datapath] datapaths.” Read in the context of the entire Amendment, N-Data’s position is the proper interpretation of the prosecution history. Though Defendants attempt to create ambiguity in the record, the record appears clear. Further, the resulting claims appear clear and as noted in *Phillips*, the prosecution history “often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Phillips*, 415 F.3d at 1317. As such the Court adopts the position of the Plaintiff. **The Court finds that “plurality of receive/transmit datapaths” means “plurality of paths of received / transmitted data.”**

H. “isochronous port”

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“isochronous port” ‘820 Patent, claims 47, 57, 58, 87	Plain and ordinary meaning in light of other constructions	port that only passes isochronous data

The issue raised by the parties’ constructions is whether the term requires the port to “only” pass isochronous data.

1. The Parties' Positions

N-Data asserts that the '820 the specification describes a port as isochronous if it sends or receives isochronous data and that such a requirement does not mean only isochronous data must pass through the port. N-Data asserts that the '820 patent teaches that one aspect of the disclosure is that isochronous and non-isochronous data maybe received over the same line. Dkt. 131 at 12 (citing '820 Patent 2:51-54; 4:3-15). N-Data asserts Defendants' construction would exclude such concepts without any disclaimer in the specification.

Defendants respond that the specification teaches "an isochronous network port for receiving isochronous information." Dkt. 135 at 22 (quoting '820 Patent Abstract). Defendants also cite to the file history. Defendants assert that the applicants distinguished prior art by stating that "only the isochronous slots are directed to IsoBuffer 209" which is fed by the isochronous network port 440 and then stated that the prior art "lacks description of particular isochronous data sink processing of information in isochronous slots." Dkt. 135 at 21-22, Ex. G (quoting '820 Patent 10/30/95 Amendment at 11-12). Defendants also assert that just because both types of data are handled in the specification it does not follow that every element must handle both isochronous and non-isochronous data. Defendants cite to Figure 3 and assert that the isoPhy 206 function is to separate the non-isochronous (Ethernet) data and the isochronous (B channel) data and pass it on to circuits that can handle each type, the isochronous port being one example. Dkt. 135 at 22, n. 17.

In reply N-Data states that the citations made by Defendants do not state that "only" isochronous data passes through the isochronous port. N-Data also asserts that the prosecution history Amendment cited by Defendants makes very clear that Ethernet (non-isochronous bursty

information) passes through one port but the other port (the B-channel port) can pass both non-isochronous (bursty) and isochronous (non-bursty) information: “the non-isochronous slots are dedicated to Ethernet bandwidth, while the isochronous slots, also known as B-channels, are dedicated to other “bursty” and/or “non-bursty” information.” Dkt. 139 at 6 (quoting Dkt. 135 Ex. G ‘820 Patent 10/30/95 Amendment at 12). N-Data notes that the B-channel as shown in Figure 3 is the channel that has the isochronous port 400.

At the oral hearing, N-Data also emphasized the language of ‘820 Patent claim 87 which states “coupling information from a network to an isochronous port, the information including non-isochronous and isochronous slots.”

2. Analysis

At the oral hearing, the parties did not dispute that an isochronous port passes isochronous data. However, Defendants attempt to incorporate an “only” limitation to this term without clear support from the intrinsic record. The specification citations provided by Defendants do not support a clear disavowal that “only” isochronous data must pass through the isochronous port. Further, the prosecution history cited by Defendants is ambiguous and subject to different interpretations. Though the amendment references “only isochronous slots” directed to the IsoBuffer 209, the amendment also makes clear that the isochronous slots (“also known as B channels”) may contain both isochronous and non-isochronous data. Such teaching implies the opposite result from that advocated by the Defendants. The intrinsic record as a whole cannot be said to limit isochronous port in the manner sought by Defendants.

N-Data’s construction mirrors the construction of the *Dell* Order. That order included a separate construction for “isochronous” and numerous other terms using the word “isochronous.”

At the claim construction hearing the Court asked the parties as to whether “isochronous” was agreed to by the parties to be limited to the construction in the *Dell* Order. Both N-Data and the Defendants stated that the construction of “isochronous” in the *Dell* Order was not applicable to the present term and the claims at issue. As such, N-Data’s construction does not provide guidance as the “other constructions” are not presented before this Court.

The Court finds that “isochronous port” is not limited such that only isochronous data must pass through the port. The Court finds that “isochronous port” means “a port that passes isochronous data.”

I. “framing network information”

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“framing network information” ‘820 Patent, claim 30	packaging information for transfer over a network	arranging information for transfer over a network into frames

The parties dispute whether the term should be construed to include “frames.”

1. The Parties’ Positions

N-Data asserts that its construction was adopted in the *Dell* Order and cites to the portion of the Order in which the Court stated “the ‘820 patent includes numerous examples in which the patentee equates ‘framing’ with ‘packaging.’” Dkt. 131 at 12-13 (citing *Dell* Order at 55-56). N-Data asserts that there is no justification for re-wording the construction to “arranging.”

Defendants assert the real issue is whether the information is placed into frames with slots (not packaging verses arranging). Defendants assert that the claim language is clear as the claim recites: “framing network information, wherein network information frames include non-isochronous and isochronous slots.” Defendants also cite to the specification which states that

the information is broken up into “a plurality of frames of information.” Dkt. 135 at 25-26 (quoting ‘820 Patent at 4:3-8).

On reply N-Data asserts that the claim language of Claim 30 already requires frames including slots. Dkt. 139 at 8.

2. Analysis

There appears to be no dispute between the parties with regard to “packaging” or “arranging.” Throughout the patents-in-suit framing is clearly referenced with regard to the placing information into frames. If “framing network information” did not encompass creating frames, the term “framing” would in effect be written out of the claim term. The claim itself also implies the creation of frames by subsequently referencing “network information frames.” **The Court construes “framing network information” to mean “packaging information into frames for transfer over a network.”**

J. “slots”

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“slots” ‘261 Patent, claims 1, 2	predetermined equal length subdivision of a frame	predetermined equal length subdivision of a frame, each subdivision used for a single type of data

The issue raised by the opposing constructions is whether “slots” requires a single type of data for a given time slot of a frame.

1. The Parties’ Positions

N-Data asserts that it has adopted the construction of the *Dell* Order. Dkt. 131 at 13 (citing *Dell* Order at 32). N-Data asserts that Defendants construction is improper because the preferred embodiment teaches that a rate adjustment slot may carry different types of data at different times:

Preferably, the frame has one or more time slots which can be used for adjusting the data rate to the particular data rate requirements of various data sources and sinks. For example, one or more time slots can be designated as rate-adjustment slots. The rate adjustment slots can be used to carry the specified type of data during some time frames but do not carry that specified type of data during other time frames.

‘261 patent at 10:1-8.

Defendants respond that N-Data’s construction renders the claimed invention inoperable. Defendants assert that Table 1 of the ‘261 Patent (9:18-55) depicts slots only filled with one type of data (each letter representing a single data type). Dkt. 135 at 20. Defendants assert that the specification states “[s]ince only predetermined positions of the time slots in each time frame are used for each of the various types of data” the data can be subsequently separated by data type even though it “appears identical.” Dkt. 135 at 20-21 (quoting ‘261 Patent at 4:4-9). Defendants assert that if different data types were in the same time slots it would be impossible to segregate the types and the invention would be inoperable. Dkt. 135 at 21.

Defendants assert that N-Data has misconstrued Defendants construction with regard to the rate adjustment slot. Defendants assert the dispute is not whether the same slot must carry the same data at various times, but rather whether various types of data can be placed into a single time slot in a given frame at a given time. Dkt. 135 at 21. Defendants reiterated this position at the oral hearing.

On reply, N-Data did not address Defendants’ argument that the construction is directed to the issue of whether various types of data can be placed into a single time slot in a given frame.

2. Analysis

At the claim construction hearing, N-Data reiterated that at different times a given slot may carry different types of data. N-Data did not assert arguments supporting a construction

holding that a given slot carries different types of data at the same time. The Court suggested to the parties a construction of “predetermined equal length subdivision of a frame, at a given time each subdivision used for a single type of data.” Defendants explicitly agreed to such construction. N-Data did not explicitly agree but neither did it articulate an opposition to such construction. **The Court construes “slots” to mean “predetermined equal length subdivision of a frame, at a given time each subdivision used for a single type of data.”**

K. Preambles ‘395 Claims 14, 15, 16; ‘216 Claims 15, 19, 97; ‘261 Claim 1

Defendants asserted that the following terms within the preambles were claim limitations:

‘395 Patent claims 14 and 16 – “communications medium” and “plurality of control signals”

‘395 Patent claim 15 – “communications medium,” “first network data station,” and “second network data station”

‘216 Patent claims 15 and 19 – “data link,” “data communication system,” “first station,” “isochronous data source,” and “non-isochronous data source”

‘216 Patent claim 19 – “processor,” “clock,” and “updatable table”

‘261 Patent claim 1 – “physical media,” “media access controller,” and “first data.”

Dkt. 135 at 28-29. In the briefing N-Data agreed that the preamble phrases cited by Defendants should be treated as limitations. Dkt. 139 at 10. At the oral hearing the parties stated that an agreement had been reached as to all of the preamble terms cited in the briefing being claim limitations except that Defendants had withdrawn the inclusion of “communications medium” as a limitation in the ‘395 Patent claims.

L. Indefiniteness: “plurality of groups of bits” ‘261 Claim 1

Term or Phrase	N-Data’s Construction	Defendants’ Construction
“plurality of groups of bits” ‘261 Patent, claims 1	Plain and ordinary meaning; if the Court determines that construction is necessary: Plurality of groups of basic units of information storage	Indefinite

For this term the Defendants assert the claim is indefinite with regard to whether as used in the claim structure as a whole the transmitter transmits the plurality of groups of bits, the encoded data or both.

1. The Parties' Positions

Defendants assert that the claim is ambiguous as to whether the transmitter transmits “a first plurality of groups of bits” or the “encoded data” or “both.” In particular, Defendants assert that the claim first describes the media access controller that outputs the “plurality of groups of bits” and sends those bits to the encoder. The encoder then outputs “encoded data” to a transmitter “for transmitting said encoded data.” Defendants then assert that later the claim creates ambiguity by stating “wherein each of said first plurality of groups of bits is transmitted by said transmitter.” Dkt. 135 at 29-30. Defendants assert that the “first plurality of group of bits” cannot be the “encoded data” because the claim distinguishes between the two. As raised at the oral hearing, Defendants further assert that the “encoded data” was added into the claim in response to the Examiner’s position that the transmitter transmitted the encoded data. Defendants assert that the applicants amended the specification to make clear the transmitter transmits the encoded data but mistakenly did not amend the wherein clause.

N-Data asserts that multiple parties in the prior litigation had no problem construing the claim and that the *Dell* Order found no construction necessary. Dkt. 131 at 15 (citing *Dell* Order at 20). N-Data asserts that the claim is not ambiguous because the language of the claim is clear: (1) the first buffer outputs data as a plurality of bits and (2) the encoder receives the data and outputs encoded data. N-Data asserts that the output of the encoder is the plurality of groups of bits, encoded. N-Data asserts that the claim then recites (3) the transmitter receives and outputs the encoded data. N-Data asserts that the output of the transmitter still includes the encoded plurality of groups of bits. N-Data then asserts that in the wherein clause the claim states that (4) “wherein each of said first group of bits is transmitted by said transmitter” N-Data asserts that when the entire claim is read in context, the reference to the “first group of plurality of bits”

in the wherein clause is clearly a reference to the plurality of groups of bits encoded in the encoded data. N-Data asserts this conforms to Figure 7A of the '261 Patent. Dkt. 139 at 10.

2. Analysis

“Only claims ‘not amenable to construction’ or ‘insolubly ambiguous’ are indefinite.” *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1250 (Fed. Cir. 2008) (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005)). That is, the “standard [for finding indefiniteness] is met where an accused infringer shows by clear and convincing evidence that a skilled artisan could not discern the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area.” *Halliburton*, 514 F.3d at 1249-50.


N-Data has provided a reasonable interpretation of the claim such that the claim is amenable to a non-ambiguous construction. In particular, the claim itself describes outputting “the first data as a first plurality of groups of bits of said first data” and the encoder encodes “at least said first data and outputting the encoded data.” The transmitter then transmits the encoded data. It is clear from the claim language itself that the first plurality of groups of bits is thus included in the encoded data in an encoder form. Such an interpretation conforms with the wherein clause which states that “wherein each of said first plurality of groups of bits is transmitted by said transmitter.” Thus, the most natural interpretation is that as proposed by N-Data. As noted by *Exxon*, “[i]f the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds.” *Exxon Research & Eng'g Co.*, 265 F.3d at 1375. Contrary to Defendant’s argument, there is ample basis in the '261 Patent to inform one of skill in the art as to the scope of the “plurality of groups of

bits” limitation. **The Court finds that “plurality of groups of bits” is not indefinite and that the term needs no construction.**

V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit. The parties are ordered that they may not refer, directly or indirectly, to each other’s claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court. Within thirty (30) days of the issuance of this Order, the parties are **ORDERED** to attend mediation, in good faith, with the designated mediator in this case.

So ORDERED and SIGNED this 13th day of December, 2012.



RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE